

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Tai-Sheng Chou

Examiner:

Serial No:

Art unit:

Filed:

For: "QUENCH BOX FOR A MULTI-BED, MIXED-PHASE COCURRENT DOWNFLOW  
FIXED-BED REACTOR"



INFORMATION DISCLOSURE STATEMENT

The Commissioner of Patents and Trademarks  
Washington, DC 20231

Sir:

Applicant is aware of the prior art as listed on the attached Form 1449. Hanson, et al., U.S. Pat. No. 3,541,000, Smith, et al., U.S. Pat. No. 3,824,081, Alcock, et al., U.S. Pat. No. 3,977,834, Aly, et al., U.S. Pat. No. 4,836,989, Nelson, et al., U.S. Pat. No. 5,989,502, Grott, et al. U.S. Pat. No. 5,837,208, Boyd, et al., U.S. Pat. No. 5,935,413, Rossetti, et al., U.S. Pat. No. 5,152,967, and Frohnert, et al., U.S. Pat. No. 4,792,229 deal specifically with quench boxes having unique mixing facilities, but do not incorporate a quench pipe manifold and nozzle assembly, a mixing chamber neither requiring manways nor having drip tubes, and having a single final distributor tray as does the instant invention. None of the cited patents are structurally similar to or operate in the same way as the instant invention.

Respectfully,

A handwritten signature in dark ink, appearing to be "John H. [unclear]".

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Docket number:  
Application number:  
Applicant  
Filing date:  
Group art unit:

*(Use several sheets if necessary)*

Examiner initial	Document number	Date	Name	Class	Subclass	Filing date if appropriate
	2,512,562	1950	Cummings	23/288		
	3,218,249	1965	Ballard	208/108		
	3,524,731	1970	Effron	23/288		
	3,541,000	1970	Hanson	208/108		
	3,824,081	1974	Smith	23/288		
	3,977,834	1976	Alcock	23/288		
	4,126,539	1978	Derr, Jr.	208/108		
	4,126,540	1978	Grosboll	208/146		
	4,138,327	1979	Scott	208/146		
	4,140,625	1979	Jensen	208/146		
	4,235,847	1980	Scott	422/220		
	4,311,671	1982	Notman	422/148		
	4,788,040	1988	Campagnolo	422/220		
	4,792,229	1988	Frohnert	366/336		
	4,836,989	1989	Aly	422/195		
	5,152,967	1992	Rossetti	422/194		
	5,403,561	1995	Koros	422/195		
	5,462,719	1995	Pedersen	422/195		
	5,567,396	1996	Perry	422/190		
	5,635,145	1997	Den Hartog	422/191		
	5,690,896	1997	Strangeland	422/191		
	5,772,970	1998	Okamoto	422/191		
	5,837,208	1998	Grott	422/195		
	5,935,413	1999	Boyd	208/49		
	5,989,502	1999	Nelson	422/194		
	6,093,373	2000	Darmancier	422/220		

[illegible]

**OTHER DOCUMENTS** (Including Author, Title, Pertinent pages, etc.)

Examiner  
initial

Chou, Tai-Sheng, *Liquid Distribution in a trickle Bed with Redistribution Screens*, I & EC PROCESS DESIGN & DEVELOPMENT, 1984

Milbourn, Cathy, EPA Dramatically Reduces Pollution from Heavy-Duty Trucks and Busses; Cuts Sulfur Levels in Diesel Fuel, ENVIRONMENTAL NEWS, 2000

Examiner:

Date considered:

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP §609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.